The Decision

The ethical consideration behind the trolley problem enables us to deliberate on the decision-making and algorithm of autonomous driving. The trolley problem was firstly proposed by Philippa Foot in 1967, having been sparking heated discussion since then and been widely mentioned in the field of smart mobility recently. There seems to be no correct answers to these trolley problem related questions and, according to the experiment "Moral Machine" conducted by a MIT team in 2016, the ethical decisions made by the respondents varies from their geolocations, cultures and other variables.

In this model, the decision was made based on the score every alternative the car faces and it is purely accumulated by how many human lives involved, with the belief of all people created equal. Notably, a pregnant woman gains extra two points. However, it is surprising to find out, after 100 times of tests, the survival rate of the pregnant, who is protected with two extra points, was lower than criminals, as the picture showed. So there is still bias in some cases that the algorithm would not guarantee those protected can alive. Also, it may be criticized that animals, treated as family by some people, are not considered here.

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# Algorithm Audit
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- % SAVED AFTER 100 RUNS
criminal: 0.80
programmer: 0.77
pregnant: 0.76
female: 0.70
passengers: 0.69
ceo: 0.65
child: 0.64
homeless: 0.64
overweight: 0.63
unemployed: 0.63
adult: 0.62
athletic: 0.62
baby: 0.62
human: 0.62
senior: 0.62
average: 0.61
cat: 0.60
student: 0.60
green: 0.59
male: 0.59
red: 0.57
unicorn: 0.53
pet: 0.52
animal: 0.50
ferret: 0.50
pedestrians: 0.48
dog: 0.46
you: 0.40
bird: 0.39
doctor: 0.25
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average age: 57.32
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A lesson for us to keep in mind is that technology is a double-edged sword, which may bring us convenience but also unfavorable impacts. As a tiny gear trying to propel for a better future, it is our duty to carefully consider the relationship between human and technology advancement.